

REMARKS

The Applicant hereby submits the present Amendment After Final, entry of which is earnestly requested. In an effort to reduce and resolve the issues, the Applicant cancels 4, 18, and 29-45 for the anticipated filing of a continuation application with these canceled claims 29-45. On the other hand, claims 1 and 15 have been amended. Thus, claims 1-29 which include only two independent claims 1 and 15 remain for reconsideration upon entry of the Amendment.

In the Office Action mailed on December 4th 2003, the Examiner rejected claims 1-45 under 35 U.S.C. Sect. 112, first and second paragraphs. In response, the Applicant amends claims 1 and 15 with suitable language for a limitation which is not taught nor suggested in the prior art alone or in combination:

the set of primer selection rules including a second rule specifying that, based on a comparison of the primer pair data and prestored gene family data of the gene sequence, the primer pair data for the coding sequence must fail to match the prestored gene family data.

The Applicant respectfully requests entry of this claim Amendment with such modified limitation. First, the above claim limitation does not add new matter to the present application. Exemplary support can be found at e.g. page 33 at lines 4-9, page 34 at lines 3-5, pages 34-40 (specific exemplary output), page 41 at lines 12-17. Second, the amended claim limitation does not raise new issues since they are substantially the same as previous claims 4 and 18 in the Amendment of 2 March 2004. Although the Examiner made Section 112 rejections on these claims, they still offered a good degree of clarity for prior art analysis especially when read in context with the specification (e.g. pp. 32-41). Thus, the Examiner has already considered prior claims 4 and 15 in the previous Amendment. Third, the present Amendment does not place a burden on the Examiner since the amended claims do not raise any new issues.

With the slightly modified language in the amendment, the rejections under Sect. 112 for claims 1-29 are now overcome. Specifically, the claim language recites positive active steps. The use of the word "that" in the previous context is eliminated. An explicit step of "reading" the prestored gene family data is not necessary to incorporate into the claims, as the "comparison" language in the claims implicitly requires a step of reading. For example, many computer languages offer a COMPARE instruction which does not require an explicit READ instruction, as the READ is performed as part of the COMPARE instruction.

In the previous office actions, the Examiner did not find any suitable prior art for rejection of such claims under Sections 102 and 103. The reason is that the prior art of record does not teach nor suggest such limitation. Thus, the Applicant respectfully requests the Examiner's rejections of claims 1-29 to be withdrawn and the application to be allowed as amended.

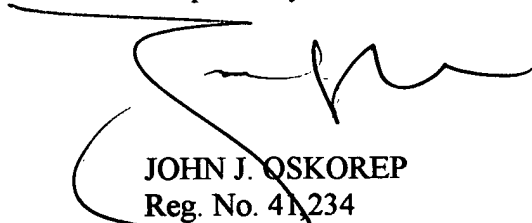
The claims reflect that the unique primer selection rules of the application provide for an efficient high-speed, high-throughput processing of gene sequence data along with a reduction of discrepancies that are not real polymorphisms or "false SNPs". Detailed features and advantages for the primer selection rule limitation are described in the present application on pp. 32-41. For example:

Without this functionality, primers that would amplify three different regions at the same time would be designed: the topo2a region of interest; the topo2b region related to it; and a nuisance region in chromosome 18. Unfortunately, the resulting data would show numerous discrepancies that are not real polymorphisms. These sequences are actually from different genetic positions that are highly similar to one another but not identical. Thus, most of the "SNPs" found in this manner are not SNPs at all. If one tried to genotype people at a "false SNP," they would get incoherent data as they would be looking at three different positions within the genome at the same time. It is important to produce data for single positions at a time so that the data can be accurately read and interpreted. (See pp. 41-42 of the present application.)

The Applicant again respectfully requests entry of this Amendment After Final. Since the amended claims 1-29 are allowable over the prior art of record, and no issues under Sect. 112 remain, the application is now in a condition suitable for allowance.

Thank you for your reconsideration. Please feel free to contact the undersigned for any reason if it would expedite the prosecution of the present application.

Respectfully Submitted,



JOHN J. OSKOREP
Reg. No. 41,234

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JOHN J. OSKOREP, ESQ.
ONE MAGNIFICENT MILE CENTER
980 N. MICHIGAN AVENUE, SUITE 1400
CHICAGO, ILLINOIS 60611

Telephone: (312) 222-1860 Fax: (312) 214-6303